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EXAMINER				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/578,737

Applicant(s)

YOON ET AL.

Examiner

CHRISTOPHER KESSLER

Art Unit

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 May 2009.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 82-168 is/are pending in the application.
4a) Of the above claim(s) 123-162 and 166-168 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 82-122 and 163-165 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 10 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election of I, claims 82-122 and 163-165 in the reply filed on 6 May 2009 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 123-162 and 166-168 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 6 May 2009.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority based on numerous applications filed in 2003 and 2004. It is noted, however, that applicant has not filed a certified copy of any of the applications as required by 35 U.S.C. 119(b).

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 82-122 and 163-165 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "excellent formability" in independent claims 82, 83, 95, and 108, respectively, is a relative term which renders the claim indefinite. The term "excellent formability" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. There is no indication in the instant specification as to the criterion used to measure formability, or what measure of that criterion constitutes "excellent" formability.

5. Claims 95-122 and 164-165 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely

exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claims 95 and 108 each recite the broad recitation "0.003 or less" for the range of copper, and the claim also recites "0.0005-0.003" which is the narrower statement of the range/limitation.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 82, 83 and 85 are rejected under 35 U.S.C. 102(b) as being anticipated by Japanese Patent Document JP09-31598 (hereinafter "Hayashida").

Regarding claim 82, Hayashida teaches the invention as claimed. Hayashida teaches a cold rolled steel sheet with excellent corrosion resistance and ductility (see abstract). The limitation of "excellent formability" is met by the teaching of Hayashida of excellent ductility. Hayashida teaches an example on p. 4 of steel sheet falling within the ranges as claimed:

Element	Claim 82	Ex. 5 of Hayashida
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C	0.003% or less	0.0023
S	0.003~0.03%	0.006
Al	0.01~0.1%	0.053
N	0.02% or less	0.0021
P	0.2% or less	0.025
Mn	0.03-0.2% *	0.09
Cu	0.005~0.2% *	
Fe/impurities	Balance	Balance
	Note:	
	* indicates optional element	

The composition of Hayashida falls within the claimed range, anticipating the entire range. Applicant is further directed to MPEP 2131.03. The steel composition of Hayashida meets the limitation wherein $0.58 \leq \text{Mn}/\text{S} \leq 10$. Hayashida further teaches that the steel compositions of the invention comprise MnS precipitates with a size of less than $0.15 \mu\text{m}$ (see Abstract). Hayashida teaches that Example 5 comprises precipitates of $0.10 \mu\text{m}$ (see p. 4), falling within the range as claimed and anticipating the entire range.

Regarding the limitation of "having aging resistance," there is no quantity of aging resistance claimed. Thus the sheet of Hayashida would have inherently had an aging

resistance, because it would have been able to support some load prior to stretcher strain or creep failure. Applicant is further directed to MPEP 2111 and 2112.01.

Further, the steel sheet of Hayashida meets all the structural limitations described by the claim. Thus the steel sheet having the same composition and structure as claimed must inherently possess the same properties. Applicant is further directed to MPEP 2112.01.

Regarding claim 83, Hayashida teaches the invention as claimed. Hayashida teaches a cold rolled steel sheet with excellent corrosion resistance and ductility (see abstract). The limitation of "excellent formability" is met by the teaching of Hayashida of excellent ductility. Hayashida teaches an example on p. 4 of steel sheet falling within the ranges as claimed:

Element	Claim 83	Ex. 5 of Hayashida
C	0.003% or less	0.0023
S	0.005~0.03%	0.006
Al	0.01~0.1%	0.053
N	0.02% or less	0.0021
P	0.2% or less	0.025
Mn	0.05~0.2%	0.09
Fe/impurities	Balance Note: * indicates optional element	Balance

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The composition of Hayashida falls within the claimed range, anticipating the entire range. Applicant is further directed to MPEP 2131.03. The steel composition of Hayashida meets the limitation wherein $0.58 \leq \text{Mn/S} \leq 10$. Hayashida further teaches that the steel compositions of the invention comprise MnS precipitates with a size of less than $0.15 \mu\text{m}$ (see Abstract). Hayashida teaches that Example 5 comprises precipitates of $0.10 \mu\text{m}$ (see p. 4), falling within the range as claimed and anticipating the entire range.

Regarding the limitation of "having aging resistance," there is no quantity of aging resistance claimed. Thus the sheet of Hayashida would have inherently had an aging resistance, because it would have been able to support some load prior to stretcher strain or creep failure. Applicant is further directed to MPEP 2111 and 2112.01. Further, the steel sheet of Hayashida meets all the structural limitations described by the claim. Thus the steel sheet having the same composition and structure as claimed must inherently possess the same properties. Applicant is further directed to MPEP 2112.01.

Regarding claim 85, Hayashida teaches that the steel contains 0.0021% N (see p. 4).

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 82-122 and 163-165 are rejected under 35 U.S.C. 103(a) as being unpatentable over WIPO document WO 2003/031670 A1 (hereinafter "Murakami").

Regarding claim 82, Murakami teaches the invention substantially as claimed.

Murakami teaches a steel sheet for cylindrical containers (see Abstract, p. 1).

Murakami teaches that the steel is cold-rolled (see claims 10-18 and pp. 14-19).

Murakami teaches the composition of the steel sheet as shown in the chart (see pp. 14-19 and also claims 10-18):

Element	Claim 82	Murakami
C	0.003% or less	0.005-0.040
S	0.003~0.03%	0.0100-0.0600
Al	0.01~0.1%	0.0010-0.0700
N	0.02% or less	0.0020-0.0300
P	0.2% or less	0.002-0.080
Mn	0.03~0.2% *	0.03-2.00
Cu	0.005~0.2% *	0.005-0.050*
Fe/impurities	Balance	Balance

	Note: * indicates optional element	
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The composition of Murakami thus overlaps the range as claimed, establishing a prima facie case of obviousness for that range. It would have been obvious to one of ordinary skill in the art at time of invention to have selected a composition in the range as claimed because Murakami teaches the same utility over an overlapping range. Applicant is further directed to MPEP 2144.05.

Murakami teaches that the steel has excellent formability (see pp. 7 and 8, abstract). Regarding the limitations of age resistance, ratios of Mn, Cu and S, and size of MnS/CuS inclusions, Murakami further teaches that the steel is processed in a manner including hot rolling, a controlled cooling, cold rolling and continuous annealing steps substantially similar to those of the instant invention (see pp. 19-24 and claims 17-18, for example). Thus, the steel sheet having the same composition and processed in a similar manner would have been expected by one of ordinary skill in the art to possess the same properties. Applicant is further directed to MPEP 2112.01.

In the alternative, Murakami teaches careful control over the MnS and CuS inclusions (see pp. 17-18). Murakami teaches that the ratio of CuS/MnS < 0.30 through a careful adjustment of the Cu/Mn ratio (see pp. 17-18). Thus, Murakami teaches that the amounts of Mn, Cu and S are results-effective variables with respect to the softening of the material at welding (see pp. 17-18). It would have been obvious to one of ordinary skill in the art at time of invention to have optimized the relative amounts of

Mn, Cu and S, because Murakami teaches that these ratios affect the softening of the material (see pp. 17-18). Applicant is further directed to MPEP 2144.05.

Also in the alternative, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, In re Cooper and Foley 1943 C.D. 357, 553 O.G. 177; 57 USPQ 117, Taklatwalla v. Marburg, 620 O.G. 685, 1949 C.D. 77, and In re Pilling, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In the absence of evidence to the contrary, the selection of the proportions of elements would appear to require no more than routine investigation by those of ordinary skill in the art. In re Austin, et al., 149 USPQ 685, 688. In the instant case, the amounts of Mn, Cu and S taught by Murakami fall within the ratios as claimed.

Regarding claim 83, the compositional range of Murakami overlaps the claimed ranges (see claims 10-18), establishing a prima facie case of obviousness for those ranges. Murakami is further applied to the claim as stated above.

Regarding claim 84, Murakami teaches that the amount of P is 0.002-0.080 (see claims 10-18), said range overlapping the range as claimed and establishing a prima facie case of obviousness for that range. It would have been obvious to one of ordinary skill in the art at time of invention to have selected an amount of P in the range as claimed because Murakami teaches the same utility over an overlapping range. Applicant is further directed to MPEP 2144.05.

Regarding claim 85, Murakami teaches that the amount of N is 0.0020-0.0300 (see claims 10-18), said range overlapping the range as claimed and establishing a prima facie case of obviousness for that range. It would have been obvious to one of

ordinary skill in the art at time of invention to have selected an amount of N in the range as claimed because Murakami teaches the same utility over an overlapping range.

Applicant is further directed to MPEP 2144.05.

Regarding claim 86, Murakami teaches that the amount of P is 0.002-0.080 (see claims 10-18), said range overlapping the range as claimed and establishing a prima facie case of obviousness for that range. It would have been obvious to one of ordinary skill in the art at time of invention to have selected an amount of P in the range as claimed because Murakami teaches the same utility over an overlapping range.

Applicant is further directed to MPEP 2144.05.

Regarding claim 87, Murakami teaches that the composition comprises 0.002-0.50% Si (see claims 10-18), said range overlapping the range as claimed and establishing a prima facie case of obviousness for that range. It would have been obvious to one of ordinary skill in the art at time of invention to have selected an amount of Si in the range as claimed because Murakami teaches the same utility over an overlapping range. Applicant is further directed to MPEP 2144.05.

Regarding claim 88, Murakami teaches that the amount of N is 0.0020-0.0300 and the amount of P is 0.002-0.080 (see claims 10-18), said range overlapping the range as claimed and establishing a prima facie case of obviousness for that range. It would have been obvious to one of ordinary skill in the art at time of invention to have selected amounts of N and P in the range as claimed because Murakami teaches the same utility over an overlapping range. Applicant is further directed to MPEP 2144.05.

Regarding claim 89, Murakami does not describe the ratio of Al/N as claimed. However it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, *In re Cooper and Foley* 1943 C.D. 357, 553 O.G. 177; 57 USPQ 117, *Taklatwalla v. Marburg*, 620 O.G. 685, 1949 C.D. 77, and *In re Pilling*, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In the absence of evidence to the contrary, the selection of the proportions of elements would appear to require no more than routine investigation by those of ordinary skill in the art. *In re Austin, et al.*, 149 USPQ 685, 688. In the instant case, the amounts of Al and N taught by Murakami fall within the ratios as claimed.

Regarding claims 90-91, Murakami teaches that the steel may comprise Mo in amount of 0.10 or less (see pp. 13 and 19), said range overlapping the range as claimed and establishing a prima facie case of obviousness for that range. It would have been obvious to one of ordinary skill in the art at time of invention to have selected an amount of Mo in the range as claimed because Murakami teaches the same utility over an overlapping range. Applicant is further directed to MPEP 2144.05.

Regarding claims 92-94, Murakami teaches that the steel may comprise V in amount of 0.10 or less (see pp. 13 and 19), said range overlapping the range as claimed and establishing a prima facie case of obviousness for that range. It would have been obvious to one of ordinary skill in the art at time of invention to have selected an amount of V in the range as claimed because Murakami teaches the same utility over an overlapping range. Applicant is further directed to MPEP 2144.05.

Regarding claim 95, Murakami teaches the invention substantially as claimed.

Murakami teaches a steel sheet for cylindrical containers (see Abstract, p. 1).

Murakami teaches that the steel is cold-rolled (see claims 10-18 and pp. 14-19).

Murakami teaches the composition of the steel sheet as shown in the chart (see pp. 14-19 and also claims 10-18):

Element	Claim 95	Murakami
C	0.0005-0.003% or less	0.005-0.040
S	0.003-0.025%	0.0100-0.0600
Al	0.01~0.08%	0.0010-0.0700
N	0.02% or less	0.0020-0.0300
P	0.2% or less	0.002-0.080
Cu	0.01~0.2%	0.005-0.050
Fe/impurities	Balance	Balance
	Note: * indicates optional element	

The composition of Murakami thus overlaps the range as claimed, establishing a prima facie case of obviousness for that range. It would have been obvious to one of ordinary skill in the art at time of invention to have selected a composition in the range as claimed because Murakami teaches the same utility over an overlapping range. Applicant is further directed to MPEP 2144.05.

Murakami teaches that the steel has excellent formability (see pp. 7 and 8, abstract). Regarding the limitations of age resistance, ratios of Cu and S, and size of CuS inclusions, Murakami further teaches that the steel is processed in a manner including hot rolling, a controlled cooling, cold rolling and continuous annealing steps substantially similar to those of the instant invention (see pp. 19-24 and claims 17-18, for example). Thus, the steel sheet having the same composition and processed in a similar manner would have been expected by one of ordinary skill in the art to possess the same properties. Applicant is further directed to MPEP 2112.01.

In the alternative, Murakami teaches careful control over the MnS and CuS inclusions (see pp. 17-18). Murakami teaches that the ratio of CuS/MnS < 0.30 through a careful adjustment of the Cu/Mn ratio (see pp. 17-18). Thus, Murakami teaches that the amounts of Mn, Cu and S are results-effective variables with respect to the softening of the material at welding (see pp. 17-18). It would have been obvious to one of ordinary skill in the art at time of invention to have optimized the relative amounts of Mn, Cu and S, because Murakami teaches that these ratios affect the softening of the material (see pp. 17-18). Applicant is further directed to MPEP 2144.05.

Also in the alternative, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, *In re Cooper and Foley* 1943 C.D. 357, 553 O.G. 177; 57 USPQ 117, *Taklatwalla v. Marburg*, 620 O.G. 685, 1949 C.D. 77, and *In re Pilling*, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In the absence of evidence to the contrary, the selection of the proportions of elements would appear to require no more than routine investigation by those of ordinary skill in

the art. In re Austin, et al., 149 USPQ 685, 688. In the instant case, the amounts of Cu and S taught by Murakami fall within the ratios as claimed.

Regarding claim 96, Murakami teaches that the amount of P is 0.002-0.080 (see claims 10-18), said range overlapping the range as claimed and establishing a prima facie case of obviousness for that range. It would have been obvious to one of ordinary skill in the art at time of invention to have selected an amount of P in the range as claimed because Murakami teaches the same utility over an overlapping range. Applicant is further directed to MPEP 2144.05.

Regarding claim 97, Murakami teaches that the amount of N is 0.0020-0.0300 (see claims 10-18), said range overlapping the range as claimed and establishing a prima facie case of obviousness for that range. It would have been obvious to one of ordinary skill in the art at time of invention to have selected an amount of N in the range as claimed because Murakami teaches the same utility over an overlapping range. Applicant is further directed to MPEP 2144.05.

Regarding claim 98, Murakami teaches careful control over the MnS and CuS inclusions (see pp. 17-18). Murakami teaches that the ratio of CuS/MnS < 0.30 through a careful adjustment of the Cu/Mn ratio (see pp. 17-18). Thus, Murakami teaches that the amounts of Mn, Cu and S are results-effective variables with respect to the softening of the material at welding (see pp. 17-18). It would have been obvious to one of ordinary skill in the art at time of invention to have optimized the relative amounts of Mn, Cu and S, because Murakami teaches that these ratios affect the softening of the material (see pp. 17-18). Applicant is further directed to MPEP 2144.05.

In the alternative, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art. *In re Cooper and Foley* 1943 C.D. 357, 553 O.G. 177; 57 USPQ 117, *Taklatwalla v. Marburg*, 620 O.G. 685, 1949 C.D. 77, and *In re Pilling*, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In the absence of evidence to the contrary, the selection of the proportions of elements would appear to require no more than routine investigation by those of ordinary skill in the art. *In re Austin, et al.*, 149 USPQ 685, 688. In the instant case, the amounts of Cu and S taught by Murakami fall within the ratios as claimed.

Regarding claim 99, Murakami teaches that the amount of P is 0.002-0.080 (see claims 10-18), said range overlapping the range as claimed and establishing a *prima facie* case of obviousness for that range. It would have been obvious to one of ordinary skill in the art at time of invention to have selected an amount of P in the range as claimed because Murakami teaches the same utility over an overlapping range. Applicant is further directed to MPEP 2144.05.

Regarding claim 100, Murakami teaches that the composition comprises 0.002-0.50% Si (see claims 10-18), said range overlapping the range as claimed and establishing a *prima facie* case of obviousness for that range. It would have been obvious to one of ordinary skill in the art at time of invention to have selected an amount of Si in the range as claimed because Murakami teaches the same utility over an overlapping range. Applicant is further directed to MPEP 2144.05.

Regarding claim 101, Murakami teaches that the amount of N is 0.0020-0.0300 and the amount of P is 0.002-0.080 (see claims 10-18), said range overlapping the

range as claimed and establishing a prima facie case of obviousness for that range. It would have been obvious to one of ordinary skill in the art at time of invention to have selected amounts of N and P in the range as claimed because Murakami teaches the same utility over an overlapping range. Applicant is further directed to MPEP 2144.05.

Regarding claim 102, Murakami does not describe the ratio of Al/N as claimed. However it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, In re Cooper and Foley 1943 C.D. 357, 553 O.G. 177; 57 USPQ 117, Taklatwalla v. Marburg, 620 O.G. 685, 1949 C.D. 77, and In re Pilling, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In the absence of evidence to the contrary, the selection of the proportions of elements would appear to require no more than routine investigation by those of ordinary skill in the art. In re Austin, et al., 149 USPQ 685, 688. In the instant case, the amounts of Al and N taught by Murakami fall within the ratios as claimed.

Regarding claims 103-104, Murakami teaches that the steel may comprise Mo in amount of 0.10 or less (see pp. 13 and 19), said range overlapping the range as claimed and establishing a prima facie case of obviousness for that range. It would have been obvious to one of ordinary skill in the art at time of invention to have selected an amount of Mo in the range as claimed because Murakami teaches the same utility over an overlapping range. Applicant is further directed to MPEP 2144.05.

Regarding claims 105-107, Murakami teaches that the steel may comprise V in amount of 0.10 or less (see pp. 13 and 19), said range overlapping the range as claimed and establishing a prima facie case of obviousness for that range. It would

have been obvious to one of ordinary skill in the art at time of invention to have selected an amount of V in the range as claimed because Murakami teaches the same utility over an overlapping range. Applicant is further directed to MPEP 2144.05.

Regarding claim 108, Murakami teaches the invention substantially as claimed. Murakami teaches a steel sheet for cylindrical containers (see Abstract, p. 1). Murakami teaches that the steel is cold-rolled (see claims 10-18 and pp. 14-19). Murakami teaches the composition of the steel sheet as shown in the chart (see pp. 14-19 and also claims 10-18):

Element	Claim 108	Murakami
C	0.0005-0.003% or less	0.005-0.040
S	0.003-0.025%	0.0100-0.0600
Al	0.01-0.08%	0.0010-0.0700
N	0.02% or less	0.0020-0.0300
P	0.2% or less	0.002-0.080
Mn	0.03-0.2% *	0.03-2.00
Cu	0.005-0.2% *	0.005-0.050*
Fe/impurities	Balance	Balance
	Note:	
	* indicates optional element	

The composition of Murakami thus overlaps the range as claimed, establishing a prima facie case of obviousness for that range. It would have been obvious to one of ordinary skill in the art at time of invention to have selected a composition in the range as claimed because Murakami teaches the same utility over an overlapping range. Applicant is further directed to MPEP 2144.05.

Murakami teaches that the steel has excellent formability (see pp. 7 and 8, abstract). Regarding the limitations of age resistance, ratios of Mn, Cu and S, and size of MnS/CuS inclusions, Murakami further teaches that the steel is processed in a manner including hot rolling, a controlled cooling, cold rolling and continuous annealing steps substantially similar to those of the instant invention (see pp. 19-24 and claims 17-18, for example). Thus, the steel sheet having the same composition and processed in a similar manner would have been expected by one of ordinary skill in the art to possess the same properties. Applicant is further directed to MPEP 2112.01.

In the alternative, Murakami teaches careful control over the MnS and CuS inclusions (see pp. 17-18). Murakami teaches that the ratio of CuS/MnS < 0.30 through a careful adjustment of the Cu/Mn ratio (see pp. 17-18). Thus, Murakami teaches that the amounts of Mn, Cu and S are results-effective variables with respect to the softening of the material at welding (see pp. 17-18). It would have been obvious to one of ordinary skill in the art at time of invention to have optimized the relative amounts of Mn, Cu and S, because Murakami teaches that these ratios affect the softening of the material (see pp. 17-18). Applicant is further directed to MPEP 2144.05.

Also in the alternative, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, *In re Cooper and Foley* 1943 C.D. 357, 553 O.G. 177; 57 USPQ 117, *Taklatwalla v. Marburg*, 620 O.G. 685, 1949 C.D. 77, and *In re Pilling*, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In the absence of evidence to the contrary, the selection of the proportions of elements would appear to require no more than routine investigation by those of ordinary skill in the art. *In re Austin, et al.*, 149 USPQ 685, 688. In the instant case, the amounts of Mn, Cu and S taught by Murakami fall within the ratios as claimed.

Regarding claim 109, Murakami teaches that the amount of P is 0.002-0.080 (see claims 10-18), said range overlapping the range as claimed and establishing a *prima facie* case of obviousness for that range. It would have been obvious to one of ordinary skill in the art at time of invention to have selected an amount of P in the range as claimed because Murakami teaches the same utility over an overlapping range. Applicant is further directed to MPEP 2144.05.

Regarding claim 110, Murakami teaches that the amount of N is 0.0020-0.0300 (see claims 10-18), said range overlapping the range as claimed and establishing a *prima facie* case of obviousness for that range. It would have been obvious to one of ordinary skill in the art at time of invention to have selected an amount of N in the range as claimed because Murakami teaches the same utility over an overlapping range. Applicant is further directed to MPEP 2144.05.

Regarding claim 111, Murakami does not teach the number of precipitates. Murakami further teaches that the steel is processed in a manner including hot rolling, a

controlled cooling, cold rolling and continuous annealing steps substantially similar to those of the instant invention (see pp. 19-24 and claims 17-18, for example). Thus, the steel sheet having the same composition and processed in a similar manner would have been expected by one of ordinary skill in the art to possess the same properties.

Applicant is further directed to MPEP 2112.01.

Regarding claim 112, Murakami teaches careful control over the MnS and CuS inclusions (see pp. 17-18). Murakami teaches that the ratio of CuS/MnS < 0.30 through a careful adjustment of the Cu/Mn ratio (see pp. 17-18). Thus, Murakami teaches that the amounts of Mn, Cu and S are results-effective variables with respect to the softening of the material at welding (see pp. 17-18). It would have been obvious to one of ordinary skill in the art at time of invention to have optimized the relative amounts of Mn, Cu and S, because Murakami teaches that these ratios affect the softening of the material (see pp. 17-18). Applicant is further directed to MPEP 2144.05.

Also in the alternative, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, *In re Cooper and Foley* 1943 C.D. 357, 553 O.G. 177; 57 USPQ 117, *Taklatwalla v. Marburg*, 620 O.G. 685, 1949 C.D. 77, and *In re Pilling*, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In the absence of evidence to the contrary, the selection of the proportions of elements would appear to require no more than routine investigation by those of ordinary skill in the art. *In re Austin, et al.*, 149 USPQ 685, 688. In the instant case, the amounts of Mn, Cu and S taught by Murakami fall within the ratios as claimed.

Regarding claim 113, Murakami does not teach the number of precipitates. Murakami further teaches that the steel is processed in a manner including hot rolling, a controlled cooling, cold rolling and continuous annealing steps substantially similar to those of the instant invention (see pp. 19-24 and claims 17-18, for example). Thus, the steel sheet having the same composition and processed in a similar manner would have been expected by one of ordinary skill in the art to possess the same properties. Applicant is further directed to MPEP 2112.01.

Regarding claim 114, Murakami teaches that the amount of P is 0.002-0.080 (see claims 10-18), said range overlapping the range as claimed and establishing a prima facie case of obviousness for that range. It would have been obvious to one of ordinary skill in the art at time of invention to have selected an amount of P in the range as claimed because Murakami teaches the same utility over an overlapping range. Applicant is further directed to MPEP 2144.05.

Regarding claim 115, Murakami teaches that the composition comprises 0.002-0.50% Si (see claims 10-18), said range overlapping the range as claimed and establishing a prima facie case of obviousness for that range. It would have been obvious to one of ordinary skill in the art at time of invention to have selected an amount of Si in the range as claimed because Murakami teaches the same utility over an overlapping range. Applicant is further directed to MPEP 2144.05.

Regarding claim 116, Murakami teaches that the amount of N is 0.0020-0.0300 and the amount of P is 0.002-0.080 (see claims 10-18), said range overlapping the range as claimed and establishing a prima facie case of obviousness for that range. It

would have been obvious to one of ordinary skill in the art at time of invention to have selected amounts of N and P in the range as claimed because Murakami teaches the same utility over an overlapping range. Applicant is further directed to MPEP 2144.05.

Regarding claim 117, Murakami does not describe the ratio of Al/N as claimed. However it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, *In re Cooper and Foley* 1943 C.D. 357, 553 O.G. 177; 57 USPQ 117, *Taklatwalla v. Marburg*, 620 O.G. 685, 1949 C.D. 77, and *In re Pilling*, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In the absence of evidence to the contrary, the selection of the proportions of elements would appear to require no more than routine investigation by those of ordinary skill in the art. *In re Austin, et al.*, 149 USPQ 685, 688. In the instant case, the amounts of Al and N taught by Murakami fall within the ratios as claimed.

Regarding claim 118, Murakami teaches that the steel may comprise Mo in amount of 0.10 or less (see pp. 13 and 19), said range overlapping the range as claimed and establishing a prima facie case of obviousness for that range. It would have been obvious to one of ordinary skill in the art at time of invention to have selected an amount of Mo in the range as claimed because Murakami teaches the same utility over an overlapping range. Applicant is further directed to MPEP 2144.05.

Regarding claims 119-122, Murakami teaches that the steel may comprise V in amount of 0.10 or less (see pp. 13 and 19), said range overlapping the range as claimed and establishing a prima facie case of obviousness for that range. It would have been obvious to one of ordinary skill in the art at time of invention to have selected

an amount of V in the range as claimed because Murakami teaches the same utility over an overlapping range. Applicant is further directed to MPEP 2144.05.

Regarding claims 163-165, Murakami does not describe the ratio of V/C as claimed. However it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, *In re Cooper and Foley* 1943 C.D. 357, 553 O.G. 177; 57 USPQ 117, *Taklatwalla v. Marburg*, 620 O.G. 685, 1949 C.D. 77, and *In re Pilling*, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In the absence of evidence to the contrary, the selection of the proportions of elements would appear to require no more than routine investigation by those of ordinary skill in the art. *In re Austin, et al.*, 149 USPQ 685, 688. In the instant case, the amounts of V and C taught by Murakami fall within the ratios as claimed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER KESSLER whose telephone number is (571)272-6510. The examiner can normally be reached on Mon-Fri, 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Roy King/
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csk